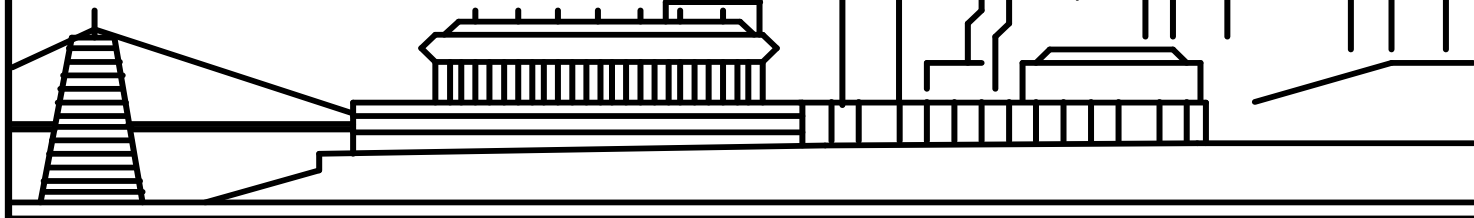




**INSTITUTE OF
ELECTRICAL &
ELECTRONICS
ENGINEERS, INC.**



OCTOBER 1997

IEEE CINCINNATI SECTION NEWSLETTER

OCTOBER MEETING: AN OVERVIEW OF THE CURRENT ELECTRIC VEHICLE INDUSTRY

DATE: Thursday, October 23, 1997

PLACE : Institute of Advanced Manufacturing Sciences (IAMS) - See map (page 2) for directions

TIME :	5:30 PM (Social Time)	COST:	\$7.00 (Members)
	6:00 PM (Dinner)		\$3.00 (Students)
	7:00 PM (Program)		\$9.00 (Non-Members)
	8:30 PM (Approximate - Adjourn)		

Reservations are required for dinner only!!!

Please call **Dee Scott at 385-9446** by **Noon,**
Wednesday, October 22, 1997 if you plan to attend.

ABOUT THE PRESENTATION: The presentation will consist of an overview of the current developments in the Electric Vehicle Industry. Discussion will center on the large and small companies which produce these vehicles as well as the new class of the low speed vehicles.

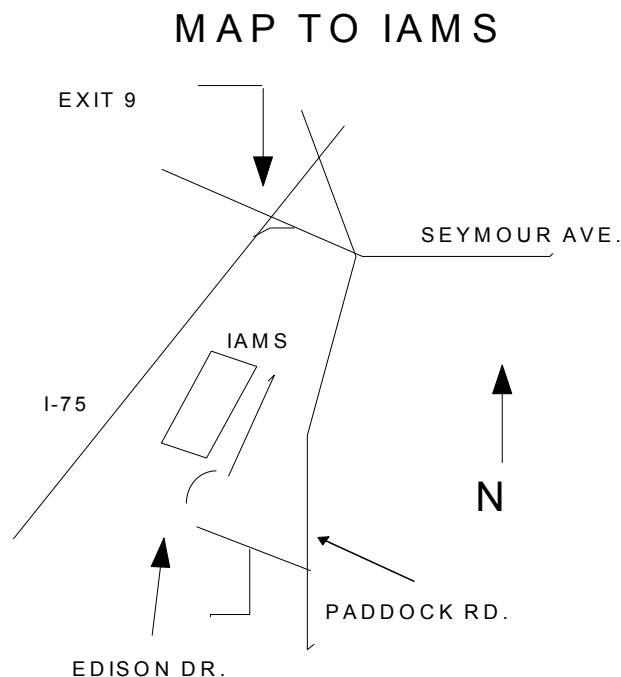
ABOUT THE SPEAKER: Mike Beebe has over 20 years of automotive technology experience. He is a partner of Northwest Diversified Services, Inc. (NDS) in Milan, Ohio and is currently engaged as a consultant with several electric vehicle companies assisting in the development of vehicle safety and testing programs. Mike has worked with electric vehicles for the past 18 years, building, maintaining and testing several types of electric vehicles and has been directly involved with building a total of 23 electric vehicles over the past 18 years. These include conversions and "ground-up" vehicles. His electric vehicle testing experience has included braking, durability, cold weather and crash testing. This has permitted him to drive many of the current electric vehicles which are available and has included many of the three-wheeled vehicles which may become available in the future.

Mike serves as chairman of the SAE Electric Vehicle Safety Committee working with all the electric vehicle manufacturers on developing safety standards for electric vehicles. He is part of the US Technical Advisor Group to ISO on the development of worldwide EV standards. He holds an AS and BS degree in Mechanical Engineering Technology from Franklin University with post graduate work in Industrial Technology at Bowling Green State University and an AS degree in Electric Vehicle Technology from Jordan Energy Institute. He is

also a member of Electricore (the Mid-America EV DARPA Consortia), has been a technical advisor for the EV News, advisor to both the Hybrid Electric Vehicle Challenge vehicles at Jordan College and Cedarville College, and advisor to the Michigan Electrathon. He has given talks on EV standards at SAE meetings, the NESEA conference and the DARPA EV conferences.

Mike has had experience in several areas in the automotive field including Auto Mechanics, Engineering Design, Management and Testing. He has been responsible for many of the crash dummies developed in the past 10 years for the automotive crash standards. He has written many test procedures for the National Highway Traffic Administration. Working for Chrysler and GM, he has developed testing labs and procedures for many automotive components.

Mike currently owns four electric vehicles which include two three-wheeled vehicles and one "ground-up" vehicle. His "ground-up" vehicle has been entered in drag races against gasoline vehicles, the Tour de Sol and SCCA Autocross events.



CHAIR'S MESSAGE

by Randy Holt, Section Chair

Jim Everly and I just got back from the IEEE Region 2 meeting in Philadelphia. Our section got an award for being the section in our region with the most growth in membership during 1996! Thanks to all of you for being these members!

While on the trip, Jim and I had time to talk about what the section is doing for you, and how we can offer you more. One idea was to look at arranging a technical workshop on something like Visual Basic. It would probably be run on Saturday mornings at a central location (perhaps IAMS), the section could pick up all or most of the expense, but there might be a small charge for attending. It would probably require several meetings. Would you be interested in such a workshop? Are there other topics that you would like to know more about? Please contact me with your ideas! If we get enough interest, the section will set it up.

I have also been concerned about our Executive Committee. Many of us have been on it for years, and we need "new blood." I would especially like to have women and students on the committee. We meet four or five

times a year, the dinner is paid for (to encourage members to attend!), and this committee makes decisions on what happens in the section — technical meeting topics, awards, where to spend money, etc. If you are interested in helping, please get in touch with me.

Our September technical meeting was on "microbotics" at the University of Cincinnati. A very special thanks to Dr. Ernie Hall, who arranged the presentations and showed us his mobile robot that competed in a recent contest with over twenty other universities -- they came in eighth, but Ernie did stress that they beat Ohio State. Dr. Thurman Henderson described and illustrated what he called "microstuff," defined as a mix of electronics and mechanical structures in an integrated circuit. Some of those mechanical elements (gears, speakers, etc.) are one-tenth the size of a human hair! UC's plan is to use these elements to create truly integrated systems that perform such things as implanted hearing aids and miniature chemical mixing "plants." Dr. Bert Baker then introduced us to the concept of "agents" that are essentially autonomous robots that can work together to accomplish ecological and military tasks. Thank you, Ernie, Thurman, and Bert, for an excellent presentation!

Our October presentation on electric cars will also be exciting. I hope that you will be able to come and be a part of it. See you at IAMS?

A MESSAGE FROM YOUR PACE CHAIRMAN

by Bill Lohner, PACE Chairman

"A Network of Professional Activities for Engineers"

I feel very pleased in that we have acquired two more volunteers to help PACE activities for high school students. Our group will be diverse in that three are 55+ and two are 25 to 35 years old. Hopeful this age spread will help us to plan a program to encourage technical and scientific study among high school students. We also would like to communicate with high school science teachers and counselors. We will meet in early October.

Below are some extracts from recent legislation passed or being considered by Congress concerning education.

The recent passage of the budget bill contained several provisions lobbied for (or against) by IEEE-USA:

- Employer-Provided Educational Assistance - Extends the expiring \$5,250 income tax exclusion or employer-provided educational assistance for undergraduate courses through May 31, 2000. IEEE-USA supported proposal to reinstate eligibility for graduate courses was dropped from the final bill.
- Individual Retirement Arrangements - Permits penalty-free withdrawals from IRAs and new IRA Plus Accounts for first time home purchases (up to \$10,000) and for undergraduate, post-secondary vocational and graduate educational expenses; and repeals the current active participant restriction by contributions by one spouse if the other is covered by an employer-sponsored pension plan for couples earning up to \$160,000.

Bill Lohner
PACE Chairman
Cincinnati Section, IEEE
(513) - 385-7268

The Personal Computer - Part 1

by Dick Reiman, Historian

The history of computers would have been different if John V. Atanasoff had publicized his computing

machine, the ABC, in 1940. Not only would he have been recognized as one of the inventors of the electronic computer, but the small inexpensive computer would have come on line in the 1950's and 1960's. But ENIAC set the pattern of large mainframe computers which only the largest institutions could afford. These were inaccessible to the average user; only a few specialists had access, and a user had to submit his program on punch cards to the specialist. These were run as part of a "batch", and minor errors or inappropriate instructions could halt the printout. Then, the procedure would be repeated with the same delays until the process was finished.

How to make computers serve many directly was solved by MIT in the late 1950's and early 1960's. The brilliant idea is called "time-sharing" where a single computer is linked to a number of terminals, with the computer switching from one terminal to the next at high speeds, executing a portion of each user's portion at every step. Because of its high speed, the computer seemed to be giving its undivided attention to each user. This led to the establishment of commercial "time-sharing" services where the customer "buys time" on the machine paying by the minute with access by telephone line. This seemed to be the wave of the future and would indeed compete with the technological innovation which would follow, the minicomputer.

In 1957, three engineers established the Digital Equipment Corporation in an old brick wool mill in Maynard, Massachusetts. The group was led by Kenneth H. Olsen from Stratford, Connecticut. He had studied electrical engineering at MIT, and had been part of Jay W. Forrester's Digital Computer Lab when he was twenty four as research assistant. He worked on the Whirlwind research computer project, and he was determined to build a small scale version of Whirlwind, the first computer to use magnetic core memory. He had experience as an observer of IBM's production of their SAGE computer, and he felt he could do better with a smaller team effort.

Olsen with his brother Stan and a colleague, Harlan E. Andersen, with their own money and \$70,000 of venture capital from American Research and Development Corporation {ARD} began production of electronic modules for computer test equipment. ARD acquired 60 percent of the stock for their capital. Three years after its founding, Digital introduced the Programmed Data Processor model 1, or PDP-1. The machine was to be a small, rugged, inexpensive real-time unit, easy to program, and available to the user to do modest tasks such as calculating payrolls or moderating a scientific experiment, when it was needed. It cost \$120,000 which was modest compared to the comparable computers, and would compete with time-sharing computers.

In 1963, Digital introduced the PDP-8, the first successful minicomputer. It about the size of a refrigerator, made with transistors and magnetic cores, and cost \$18,000. It ran only one program at a time and processed data in twelve-bit words, and contained only 4K words of memory. The minicomputer had arrived.

IEEE NEWS

IEEE-USA NEWS BYTES

* On April 23, the House of Representatives passed the 21st Century Patent Improvement Act (H.R. 400), a major overhaul of the U.S. patent system that would transform the Patent and Trademark Office (PTO) into a quasi-private corporation and harmonize some aspects of the patent process with international practice. A key provision would require that the PTO publish patent applications after 18 months from the date of filing. According to testimony submitted at the request of the Judiciary Committee by IEEE-USA Intellectual Property Committee Chair Daniel E. Fisher, "harmonization will lead to U.S. prosecution for worldwide patents, thereby reducing the cost of filing foreign patents for the U.S. innovator." IEEE-USA offered specific changes to improve H.R. 400 and similar legislation in the Senate (see IEEE-USA's statement on S. 507), one of which -- an exemption of small businesses, universities, and individual inventors from patent publication requirements -- was made to H.R. 507 in an amendment by Rep. Marcy Kaptur, D-Ohio.

* On April 28, IEEE-USA joined more than 20 other organizations in endorsing the Security and Freedom Through Encryption Act (H.R. 695) in a letter to members of the House Committee on the Judiciary and its Subcommittee on Courts & Intellectual Property. However, although the letter described the bill as a "positive framework for reforms," it did express concern with encryption crime, noting the potential for prosecutorial abuse and concluding that "the provision could also operate as a substantial disincentive to the widespread adoption of strong encryption techniques." The Judiciary Committee passed the bill on May 14.

* At the 1997 IEEE-USA Technology Policy Council Symposium on June 11, Rep. Dan Schaefer, R-Colo., told more than 100 attendees that the House Commerce Energy and Power Subcommittee should pass his legislation to restructure the electric-utility industry by the end of this month. Schaefer, who chairs the subcommittee, also told the group that he expects the full Commerce Committee to take up the bill in the fall. H.R. 655 would permit consumers to choose their electricity supplier by Dec. 15, 2000.

* In comments aired June 11 on nearly 20 radio newscasts around the country, IEEE-USA Energy R&D Policy Committee Chair Robert J. Thomas urged federal lawmakers not to lose sight of the technical challenges involved in reworking the nation's complex electric-power delivery system. According to Thomas: "Lower electric bills are small comfort if your lights don't work when you flip the switch. We take the high reliability of our nation's electricity for granted. But can we maintain reliability while creating a national power grid out of many small regional ones, while transmitting power long distances from generating facilities, and while facing pressure to cut costs by reducing research and development? To make restructuring work, legislators, regulators and industry will need to work together with engineers to create a new industry that will deliver electricity reliably, as well as cheaply."

* President Clinton announced on June 11 that IEEE Senior Member Richard Garwin was one of three winners of this year's Enrico Fermi Award. The government's oldest science and technology award, the Fermi Award recognizes lifetime achievements in the field of nuclear energy. Garwin is a fellow emeritus at IBM Research in Yorktown Heights, N.Y., and a consultant to Sandia National Laboratory. He joins the ranks of fellow physicists and Fermi Award winners, including von Neumann, Teller, and Oppenheimer.

GOP LEGISLATORS PUSH LAW TO ENSURE PRIVATE SECTOR DOES COMMERCIAL WORK

by Edith Carper, Special to IEEE-USA Perspectives

The Republican drive to require that the federal government divest itself entirely from activities that are commercial in nature has gotten off to a slow start as Congress approaches the mid-term. In February, two members of Congress introduced legislation to eliminate government "competition" with the private sector, but the bills have not moved to the hearing stage.

On Feb. 12, Sen. Craig Thomas, R-Wyo., and Rep. John Duncan, R-Tenn., introduced bills that codify the 40-year-old federal policy of using the private sector for commercial tasks. Six senators and seven representatives, all Republicans, are co-sponsoring the bills.

Thomas believes that government competition with the private sector is a growing problem. The intent of his bill, he said, is "to get agencies to focus on their core mission" and allow the private sector to carry out routine commercial tasks. The legislation, he said, "has the potential to open up a \$30 billion market for the nation's small and large businesses." The federal government's avowed policy of relying on the private sector, he said, "has not worked. The bureaucracy has not found ways and means to procure goods and services from the private sector."

The Thomas bill gives a lead role to the Office of Management and Budget in identifying functions to stay within the federal establishment and those that the private sector can do better. The bill also includes safeguards for displaced government employees, with a provision that "facilitates transition to the private sector."

The Senate has already explored the bill's concept by 1996 Senate Governmental Affairs Committee hearings. The U.S. Chamber of Commerce strongly endorses the bill, as does the National Federation of Independent Businesses, the Contract Services Association, the Small Business Legislative Council and the American Consulting Engineers Council.

BILLS COULD ENABLE SMALL BUSINESSES TO BUY AFFORDABLE HEALTH INSURANCE

by Edith Carper, Special to IEEE-USA Perspectives

Recently introduced legislation in Congress could expand health insurance coverage to "millions of working families with children" by allowing workers and their families to buy insurance through pooling arrangements. According to the principal House sponsor, Rep. Harris Fawell, R-Ill., the bill, H.R. 1515 "will help make insurance more affordable by expanding coverage and lowering costs; more accessible by removing barriers and increasing choice through association plans; and more secure by improving continuity of coverage and consumer protections." Legislators referred the bill, which has 112 co-sponsors, to the Committee on Education and the Workforce.

On May 9, Sens. Tim Hutchinson, R-Ariz., and Fritz Hollings, D-S.C., introduced identical legislation in the Senate. Hutchinson said expanded coverage is necessary now. "At the very time that we want to expand health insurance for millions of children, at the very time that we have a goal of providing universal health coverage to all Americans, we are finding that the percentage of people with health coverage is declining."

The legislation will give associations and franchise networks the opportunity to form multistate purchasing groups under a single set of national rules, through ERISA, the Retirement Income Security Act. Sponsors say the bill will lower administrative costs, provide greater bargaining power to smaller employers and do away with the need for small businesses to comply with costly state-mandated benefit requirements. The bill does not require small business groups to join the purchasing pools, but pre-empts those that do from state laws under ERISA.

Meanwhile, discussions of pension portability are taking place -- not in Congressional committees, but in quasi-official gatherings sponsored by members of Congress with an interest in retirement security issues. On May 1, a bipartisan group of legislators (13 senators and 24 representatives) attended a session devoted to pension portability. "Witnesses" included attorneys from firms involved in retirement issues, representatives of the American Society of Pension Actuaries, an official of Fidelity Investments, and an IBM official who heads that company's retirement section.

The co-chairs of the meeting were Sens. Jim Jeffords, R-Vt., and Jeff Bingaman, D-N.M., and Reps. Nancy Johnson, R-Conn., and Earl Pomeroy, D-N.D.

TEST DRIVE THE IEEE OPERA

Would you buy a car without taking it for a test drive? Would you buy a computer without knowing what it can do? Perhaps you feel the same way about subscribing to an on-line periodicals server. Well, Transactions & Journals has launched a public demonstration site on its Online Periodicals Research Area (OPeRA) server.

The demonstration allows non-subscribers - including all members, volunteers, and staff - to take a look at the Institute's first venture into online journal publishing.

The OPeRA project, formerly known as JOLLY (Journals On-Line Launch Year), began in late 1996 as a cooperative effort among several technical societies to disseminate transactions, journals, and letters publications on a secure Web site for Society members or Society member subscribers. The main collection offers multiple issues of a dozen publications. Users can search and browse citation information and tables of contents, then download entire papers in the Acrobat (PDF) format.

The demo site works the same way, using samples of two Transactions issues contributed by the Lasers and Electro-Optics Society (LEOS) and the Electron Devices Society (EDS). You can check out the OPeRA demo area at <http://opera.ieee.org/opdemo/>

REACHING MILESTONES

Are you proud of your profession? Do you have a great regard for the pioneers who have gone before you? Are you interested in something which can result in publicity for your IEEE Section or Chapter? The Milestones program may be just what you need.

The Milestones program, conducted by the IEEE History Committee through the Center for the History of Electrical Engineering, honors significant achievements in electrical, electronic, and computer engineering. The goals are to foster an awareness of professional history; increase public understanding of the profession; and encourage preservation of historic materials and sites, collecting documentation and making it widely available.

Your Section/Chapter can nominate an achievement, by providing documentation of its historical significance. Upon approval by the committee, a plaque is cast and the Section conducts a dedication ceremony. Invite local politicians to participate, and get local newspapers to cover the event - particularly if they have a column dedicated to the area's history.

Milestones is intended to be a global program. Thus far, only 5 of the 25 Milestones have been from outside the US. The IEEE History Committee looks forward to receiving more global nominations as awareness of this program spreads. To get started, contact the Center for the History of Electrical Engineering. Each time you see your plaque, you'll be glad you did.

FCC WARNS OF DANGER OF AT&T'S SUGGESTED MERGER WITH A BELL COMPANY

by Edith Carper, Special to IEEE-USA PERSPECTIVES

When Congress passed the Telecommunications Act last year, one argument was that it would cause competition to flourish and bring better service and lower costs to consumers. One year later, as telecommunications mergers are on the rise, some regulatory officials worry that competition may actually be repressed with some proposed mergers.

One such union -- between AT&T and SBC Communications Inc. -- has raised the hackles of the Federal Communications Commission (FCC) and some senators. FCC Chair Reed Hundt said the prospective merger is "unthinkable" under anti-trust guidelines, and that the mere discussion of merger "can have negative impacts on competition" by discouraging plans of would-be competitors. Although Hundt has announced his resignation from the FCC, he will stay on as chairman until there is a replacement.

AT&T has gone public only to the extent that its chair, Robert E. Allen, announced that a merger would be legal and pro-competitive under certain circumstances. And, reacting to the Hundt speech, AT&T said that if a partnership between a long-distance company and a local Bell company can be "structured to increase

competition, both in the Bell's home territory and in the states it does not currently serve, then it ought to be considered."

If the merger is actually proposed, it must pass scrutiny not only by the FCC and the Justice Department, but by the states the Bell company serves. Texas-based SBC Communications Inc. provides telecommunications services to customers in five southwestern states; it acquired the Pacific Telesis Group in April 1997.

REDUCE GOVERNMENT SECRETS, SENATORS SAY

by Edith Carper, Special to IEEE-USA PERSPECTIVES

Two senators with widely divergent political views have joined forces in proposing legislation to overhaul the entire system of managing classified information. The bill (S. 712, filed on May 7) calls for downsizing the amount of secret information and for examination and declassification of government documents at specified intervals. The cost of keeping the federal government's secrets was an estimated \$5.2 billion in 1996.

Sens. Patrick Moynihan, D-N.Y., and Jesse Helms, R-N.C., are the Senate sponsors. Reps. Larry Combest, R-Tex., and Lee Hamilton, D-Ind., are sponsoring companion legislation in the House.

Moynihan and Helms agree that we must develop "a culture of openness" in the federal government and that the term "secrecy" must be defined by statute. Secrecy, they say, belongs in the realm of national security and "must serve that interest alone."

Helms went on to say that Congress must establish a life cycle for secrets so that "all information, classified and unclassified alike, has a life span in which decisions must be made regarding creation, management and use," he said. This kind of rationalization would favor openness and reduce costs. The bill is now in the Senate Governmental Affairs Committee.

THE NEW TELECOMMUNICATIONS LAW - ONE YEAR LATER

by Irwin L. Lebow, IEEE-USA Committee on Communications & Information Policy

The main purpose of the Telecommunications Act that was signed into law a little over a year ago was to do away with unnecessary regulation. The act would unleash a rash of competition that would boost the telecommunications industry and reduce artificially high prices to consumers. In particular, the law opened the largely monopolistic local telephone service market to competition and allowed the Baby Bells, which had been restricted to the local area market, to compete in the long-distance business. The hype accompanying the bill led the public to believe that the telecommunications companies were chafing at the bit and that unbridled competition would erupt as soon as the law went into effect.

The history of telecommunications has shown that the outcome of free and unbridled competition can lead to a stable competitive market. But it can also lead to monopoly. While the regulatory processes in the Federal Communications Commission and the Justice Department will prevent any single company from dominating as AT&T once did, it is possible that the future might as well see the industry dominated by a few large companies.

In fact, the news that has made the headlines during the past year has been of proposed mergers which appear to be anticompetitive, especially the latest of these involving AT&T and SBC, itself a company created through a merger of two Baby Bells. There is also litigation underway on issues crucial to the opening of the local area to competition.

Of course, telecommunications is more than telephony. We have yet to see the effects of burgeoning Internet and telephone markets on each other, not to mention the cable and satellite television interests. And in a

technology-driven field, anything can happen -- we only have to call to mind the fact that the Justice Department once considered IBM a monopolistic threat. In short, despite the hype, this first year has not been one of change, but of preparation for change. We need more than one year to understand the implications of such revolutionary law.

LEARNING NEVER GETS OLD

Produce Clean Software Designs, Take An Object-Oriented Analysis Challenge

PISCATAWAY, NJ, August 10, 1997 -- The process of developing software is extremely creative and potentially satisfying, but often fraught with pitfalls, delays, and “bugs” resulting in frustration. A new self-study course on analyzing and designing object-oriented (OO) systems from The Educational Activities Board of The Institute of Electrical and Electronics Engineers can help reduce the level of frustration and software programming flaws.

This continuing education course, authored by Dr. Eric J. Braude of Boston University, consists of a textbook -- Object Oriented Modeling and Design, (Rumbaugh et. al, Prentice Hall) -- a study guide, a workbook and a final exam. Those who receive a passing grade on the final exam, will be awarded eight Continuing Education Units (CEU's) and an IEEE Certificate of Achievement.

Augmenting and explaining the OMT methodology of Rumbaugh, et. al, this course incorporates useful elements of the Unified Modeling Language, Design Patterns, and the Booch, Jacobson, Coad/Yourdon and Shlaer/Mellor methodologies. Included into contents are:

- class selection,
- class relationship,
- attribute and operation selection,
- dynamic and function models,
- system design,
- and object design.

Performing object-oriented analysis before programming makes the software-development process more grounded, more professional and more orderly. Dr. Braude aimed this course to provide a practical roadmap for designing object-oriented applications. His goal is to prepare the software engineer to develop OO systems and code with a clarity and minimum of rework. Also provided is a clear sequence of steps for the design of OO applications. Although the text includes fragments of C++ and Java, knowledge of them is not required. This course will guide the users through the analysis, system design and object design phases of system building.

Among the many objectives, this course will teach the following:

- the key reasons for using OO methods,
- the three parts of the OMT development process,
- the selection of good class candidates.

Every unit of this highly applied course has self-testing questions and problems as well as hands-on exercises to ensure better understanding and usefulness. When completed, the course package can also serve as a valuable reference.

To order, use product number HL5733. Member price, \$249. List price, \$299. The package may be ordered from the IEEE, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331. Make checks payable to IEEE. For single sales, call 1-800-678-IEEE; for company or institutional sales, call 1-800-701-IEEE; or fax 732-981-9667.

Please add the following shipping and handling charges: for orders totaling \$1.00 to \$50.00, add \$4.00; \$50.01 to \$75.00, add \$5.00; \$75.01 to \$100.00, add \$6.00; \$100.01 to \$200.00, add \$8.00; over \$200.00, add \$15.00. Call for overseas Air Freight charges. Credit card orders (MasterCard, Visa, American Express, and Diner's Club) are accepted.

Learn To Eliminate EMI with EMC Self-Study Course

PISCATAWAY, NJ, September 1, 1997 -- A new self-study course on Electromagnetic Compatibility (EMC)/Electromagnetic Interference (EMI) is now available from The Educational Activities Board of The Institute of Electrical and Electronics Engineers.

This continuing education course, authored by Dr. V. Prasad Kodali, consists of three parts: a study guide, a textbook -- Engineering Electromagnetic Compatibility: Principles, Measurements and Technologies, and a reader -- EMC/EMI: Selected Readings.

In the age of far-reaching information technology, electromagnetic compatibility is a relevant and an important issue in many areas of electro-technology. The EMC/EMI self-study course is a learning package designed for engineers in telecommunications, computer, power, consumer electronics, medical equipment and automotive industries. Circuit and system designers, test & evaluation engineers, and specification professionals. The course is devised to expose these individuals to an abundance of information on EMC and EMI.

Among many objectives, the course will teach the following:

- the approaches to model and understand the sources of EMI;
- techniques of measuring EMI;
- procedures for measuring immunity to pulsed interferences;
- and useful engineering practices and technology tools to minimize EMI and improve EMC.

In addition, learners will become familiar with a variety of military and non-military standards used in specifying limits for electromagnetic interference and electromagnetic compatibility.

The EMC/EMI course comprises of 14 lessons, each specifying learning objectives, reading assignments with answers, and discussion topics. Lesson 14, written by Andrew Drozd, discusses EMC Computer Modeling and Simulation. A self-testing quiz follows each lesson. Among the topics featured in the lessons are:

- | | |
|---|---|
| · Natural and Nuclear Sources of EMI; | - Pulse Interference Immunity; |
| · EMI from Apparatus and Circuits; | - EMI Filters; |
| · Probabilistic And Statistical Physical Models; | - Cables, Connectors and Components; |
| · Radiated and Conducted Interference Measurements; | - Frequency Assignment / Spectrum Conservation; |
| · Grounding, Shielding, and Bonding; | |

A final examination follows the course. Those who successfully complete the course, will be awarded 8CEU's and the IEEE Certificate of Achievement.

Dr. V. Prasad Kodali received his Ph.D in 1967 from University of Leeds in England. He is an adviser in the Department of Electronics of the Government of India. Dr. Kodali is also an IEEE Fellow. Mr. Andrew Drozd is the president and chief consultant for Andro Consulting Services providing research, development and consultation in electromagnetics technology and related engineering disciplines.

To order, use product number HL579. Member price, \$279. List price, \$349. The package may be ordered from the IEEE, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331. Make checks payable to IEEE. For single sales, call 1-800-678-IEEE; for company or institutional sales, call 1-800-701-IEEE; or fax 732-981-9667.

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Computer Engineers Learn To Tackle Difficult Computation Problems With A Vital Learning Tool On Evolutionary Computation

PISCATAWAY, NJ, September 5, 1997 -- Evolutionary computation is a new and expanding field with applications that often go beyond solutions offered by the classic techniques.

To prepare engineers to overcome these dilemmas, the Educational Activities Board of the Institute of Electrical and Electronics Engineers, Inc. (IEEE), has produced a video-tutorial sponsored by the Neural Networks Council.

An Introduction To Evolutionary Computation offers an overview of this new technology. The presenter, Dr. David B. Fogel of Natural Selection, Inc., discusses in sufficient detail the areas of genetic algorithms, evolution strategies, and evolutionary programming. The presentation is designed to provide engineers new to evolutionary computation with the adequate knowledge to address arising issues. In addition, the video covers genetic programming and artificial life, as well as connections between the fields of evolutionary computation, neural networks, and fuzzy systems.

The video, with a run time of one hour and 46 minutes, is an essential learning tool for computer engineers and practitioners who need to solve real problems resistant to traditional solutions. It is also useful for the academia and engineering students who want to learn more about the field of evolutionary computation. The viewers will learn about the historical perspective of evolutionary computation and its use in machine learning. They will also learn how to generate solutions to difficult engineering problems. To assure the effectiveness of the points made in the video, users should have a familiarity with computer programming. They should also have a basic knowledge of neural networks, fuzzy systems, evolutionary biology and engineering.

Dr. David B. Fogel is the executive vice president and chief scientist of Natural Selection, Inc., La Jolla, California. Dr. Fogel received a Ph.D. in engineering sciences (systems science) in 1992 from the University of California at San Diego. He has published over 90 papers in journals and conferences and authored two technical books on evolutionary computation.

Dr. Zbigniew Michalewicz, a professor of Computer Science at the University of North Carolina in Charlotte, served as a technical editor for the tutorial. He received a Ph.D. in 1981 from the Institute of Computer Science, Polish Academy of Sciences. His current research interests lie in the field of evolutionary computation. Dr. Michalewicz has published a monograph and over 100 technical papers on evolutionary computation.

All video products are available in either NTSC or PAL standard. To order, one must select the standard that is used in the country where the tape will be played. If the individual is unsure about the video standard used in a particular country, he or she can call IEEE customer service.

To order the video, which consists of two tapes, use IEEE product number: HV6969. PAL number HV6971. Member price, \$299.95. List price: \$329.95. Order from the IEEE, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331. Make checks payable to IEEE. For single sales, call 1-800-678-IEEE; for company or institutional sales, call 1-800-701-IEEE; or fax 732-981-9667.

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NEW MEMBERS

The following individuals are new IEEE members who are in our Section:

MELISSA M COOK

The following individuals are existing IEEE members who have moved into the Cincinnati Section:

HEATHER L CASSIDY
DONALD J DANKO
JOHN P FLEMING
RICHARD A GERTH
PAUL M HARTKE

JOHN M HENRY
GEORGE MARK NIENABER
ILYA SHMULEVICH
DAVID N TRAUB
STEVEN R VAN FLEET

MARK E VIDOUREK

We wish to extend our welcome to all of our Section's new members!!!

Dee Scott (call for meeting reservations)	385-9446
Randy Holt - Chairman	572-5710 (Office), holthr@nku.edu (E-mail)
Bob Haas - Vice Chairman	231-2584, rwhaas.engr@worldnet.att.net (E-mail)
Orest Melnyk - Treasurer	397-5419, o.melnyk@ieee.org (E-mail)
Chris Anderson - Secretary	573-6511, canderso@uceng.uc.edu (E-mail)
Ron Harbaugh - Member-At-Large	352-6202
Eric Wright - Member-At-Large	881-3329
Jack Beckmeyer - Arrangements Chairman	353-2643, 353-2671 (Fax)
Bill Lohner - PACE Chairman	385-7268
Bob Morrison - Editor	287-3697 (Office), 287-4155 (Fax) j.r.morrison@ieee.org (E-mail)

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